



Composite Plot of Plume Monitoring Campaign carried out on the 20th August 1995, English Channel. The Acoustic Backscatter Transects were obtained using an RDI 1200kHz BroadBand Acoustic Doppler Current Profiler.

The series of transects depicted on the left were obtained whilst monitoring the plume from the TSHD ARCO Severn.

Transect 1, obtained minutes after dredging commenced, shows the development of several components of the plume. At a distance of just 140-262m astern, the asymmetry of the region of high acoustic returns shows, (left to right), little overspill on the port side of the dredger and much more overspill on the starboard side. This latter component is due to a combination of the vessel listing slightly to starboard and the rejected material also being discharged on the starboard side. The rejected component is that which is most likely to have already reached the seabed at the point of this transect. On the port side, at the seabed, the development of the plume attributable to the draghead motions on the seabed can be seen quite clearly. This is some 3m high by less than 2m wide at this point.

Transect 2 was recorded at a similar distance to Transect 1, 145-274m astern of the dredger, but in the reverse direction ie the starboard side of the ship is on the left side of the record. Again this shows much material reaching the seabed very quickly under the reject chute, with little overspill from the port side. The draghead plume is indistinguishable from the background clutter.

Transect 3 (334-420m astern), Transect 4 (458-452m astern), Transect 5 (425-375m astern) and Transect 6 (267-126m astern) represent the decay of the plume after dredging has finished (the dredger is drifting). This explains the apparent inconsistency that the plume appears to be dispersing, whilst the transect are successively closer to the dredge position. Without inputs from the dredger at the sea surface, the plume becomes less intense at the surface first, (Transect 5), more so by Transect 6. That is to say, this series of transects represents the decay of the plume with time at an approximate position, rather than representation of the time and distance decay of the other series of transects presented.